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This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method for forming an insulation layer over a substrate, the method comprising:

forming a surface sensitive silicon oxide layer over the substrate; and

forming a porous silicon oxide layer on the surface sensitive silicon oxide layer by thermal chemical vapor deposition, wherein said porous silicon oxide layer is deposited at a temperature of about 400°C or less, the porous silicon oxide layer having a density of less than or equal to about 1.7 g/cm^3;

wherein the ~~surface sensitive~~ porous silicon oxide layer has a wet etch rate of greater than about 6000 Å/min.

2. (Original) The method of claim 1 wherein the porous silicon oxide layer has a carbon content of at least 5 atomic percent.

3. (Original) The method of claim 1 wherein the porous silicon oxide layer has a dielectric constant of between about 2.9 and 3.2.

4. (Original) The method of claim 1 wherein the surface sensitive silicon oxide layer is deposited from a plasma enhanced CVD reaction of TEOS and oxygen.

5. (Original) The method of claim 1 wherein the porous silicon oxide layer is deposited from a process gas comprising TEOS and ozone.

6. (Original) The method of claim 5 wherein a molar ratio of said TEOS to ozone is between about 10:1 and 20:1.

7. (Original) The method of claim 1 further comprising forming a capping silicon oxide layer over the porous silicon oxide layer.

8. (Original) The process of claim 1 wherein said porous silicon oxide layer is deposited using an SACVD process at a pressure of between 100-700 Torr.

9. (Original) The method of claim 1 wherein said surface sensitive and porous silicon oxide layers are deposited in an in situ process.

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10. (Original) A method for depositing an intermetal dielectric film over a plurality of conductive lines, the method comprising:

depositing a plasma enhanced chemical vapor deposition (CVD) silicon oxide layer over the plurality of conductive lines from a plasma of tetraethyloxysilane (TEOS) and oxygen; and

depositing a silicon oxide layer over the plasma enhanced CVD silicon oxide layer by a thermal CVD process from a gas mixture of a TEOS and ozone wherein said thermal silicon oxide layer has a dielectric constant of about 3.2 or less and a carbon content of at least about 5 atomic percent.

11. (Original) The method of claim 10 wherein the density of said thermal silicon oxide layer is less than or equal to about 1.7 g/cm^3.

12. (Original) The method of claim 10 further comprising depositing a plasma enhanced CVD silicon oxide capping layer over the thermal silicon oxide layer.

13. (Original) The method of claim 10 wherein the dielectric constant of said thermal silicon oxide layer is greater than or equal to about 2.9.

14. (Original) The method of claim 10 wherein a molar ratio of said TEOS and ozone used to deposit said thermal silicon oxide layer is at least 8:1.

15. (Original) The method of claim 6 wherein said molar ratio is at least about 11.5:1.

16. (Original) The method of claim 14 wherein said molar ratio is between about 10:1 and 20:1.

17. (Original) The method of claim 10 wherein said oxygen is provided from a flow of molecular oxygen.

18. (Original) The method of claim 10 wherein said plasma enhanced and thermal CVD silicon oxide layers are deposited in an in situ process.

19. (Currently amended) The process of claim 10 wherein said <u>thermal</u> silicon oxide layer is deposited using an SACVD process at a pressure of between 100-700 Torr.

20. (Withdrawn) A substrate processing system comprising:

a housing defining a process chamber;

a substrate holder, adapted to hold a substrate during substrate processing in the process chamber;

a gas delivery system configured to introduce gases into said process chamber;

a heater configured to heat the substrate;

a controller for controlling said gas delivery system and said heater; and

a memory coupled to said controller comprising a computer-readable medium having a computer-readable program embodied therein for directing operation of said controller, said computer-readable program including instructions to control said gas delivery system to flow a first process gas into the chamber and deposit a surface sensitive silicon oxide layer over the substrate and then, afterwards, control said gas delivery system to flow a second process gas into the chamber comprising TEOS and ozone and control said heater to heat said substrate to a temperature of about 400°C or less to deposit a porous silicon oxide layer on the surface sensitive silicon oxide layer.

21. (Original) The method of claim 10 wherein the plasma enhanced CVD silicon oxide layer partially fills gaps between the plurality of conductive lines.

22. (Original) The method of claim 21 wherein the thermal silicon oxide layer fills the gaps between the plurality of conductive lines.

23. (Original) The method of claim 1 wherein the substrate includes at least one gap, and wherein the surface sensitive silicon oxide layer partially fills the at least one gap.

24. (Original) The method of claim 23 wherein the porous silicon oxide layer fills the at least one gap.

25. (Currently amended) A method for forming an insulation layer over a substrate having at least one gap, the method comprising:

forming a surface sensitive silicon oxide layer over the substrate partially filling the at least one gap; and

forming a porous silicon oxide layer on the surface sensitive silicon oxide layer by thermal chemical vapor deposition, wherein said porous silicon oxide layer is deposited at a temperature of about 400°C or less, the porous silicon oxide layer having a density of less than or equal to about 1.7 g/cm^3;

wherein the porous silicon oxide layer has a wet etch rate of greater than about 6000 Å/min.

26. (Previously added) The method of claim 25 wherein the porous silicon oxide layer fills the at least one gap.